

IN THE SPECIFICATION:

Kindly replace paragraph [0009] with the following amended paragraph.

The idea underlying an embodiment of the invention is that the mining vehicle includes means for 'dead reckoning'. The means include at least means for measuring the distance ~~travelled~~ traveled and determining the vehicle's direction. The measurement means required by the dead reckoning are relatively simple, reliable and sufficiently accurate.

Kindly replace paragraph [0019] with the following amended paragraph.

The mining vehicle 1 may comprise means for determining its location. The location of the mining vehicle 1 can be determined when the distance ~~travelled~~ traveled and the direction of the vehicle are known. The direction of the mining vehicle can be found out by means of a gyroscope [[12]] or the like, for instance. The distance ~~travelled~~ traveled can be calculated in the control unit 8 of the vehicle after suitable sensors 30 have first measured rotational data directly from a wheel 3 of the vehicle 1, or alternatively indirectly from the power transmission 5 or the engine 4. The rotational motion of the wheel 3 can be calculated in the control system, provided that the transmission ratios are known. Furthermore, the control unit 8 is able to calculate the magnitude of the distance ~~travelled~~ traveled by the vehicle 1 on the basis of the rotational motion and diameter of the wheel 3. The location data can be transmitted using the wireless network 10 to the second control unit 12 belonging to the mine control system 11. Employing the location data, the mine control system 11 may monitor the movement of the mining vehicle 1 in the mine according to the inventive idea. The mine control system 11 may be provided with a user interface for manual monitoring of the operation of mining vehicles 1 in the mine 17.

Furthermore, the mine control system 11 may keep a register of the movements of mining vehicles 1 in the mine, and further provide various reports and messages on monitoring results. In addition, the control system 11 may be arranged to give new work instructions to the operator of the mining vehicle on the basis of monitoring.

Kindly replace paragraph [0026] with the following amended paragraph.

FIG. 4 illustrates part of an underground mine 17. The mine 17 may also be an opencast mine or the like. The mine 17 may comprise one or more connecting tunnels 20 and one or more production tunnels 21. Actual rock breaking, for example by blasting or mining, takes place in the production tunnel 21. The rock material broken from the rock can be transported with a transporting vehicle 1a from the production tunnel 21 to the connection tunnel 20 and further to the unloading site 22, such as a transporting shaft or a suitable conveyor. Several production tunnels 21 may be connected to the connecting tunnel 20, and on the other hand, the connecting tunnel 20 may be provided with several unloading sites 22, as shown in FIG. 4. The production tunnels 21 may be very long, up to several hundreds of meters long. In addition, the conditions in the production tunnels are severe because of drilling and blasting, for example, for which reason it is difficult to build a complete wireless network in the production tunnels 21. The front end of each production tunnel 21 can be, however, provided with a base station 13d, by means of which the transporting vehicle 1a operating in the production tunnel 21, the rock drilling rig 1b or any other mining vehicle can establish a data communication connection 9a to the mine control system 11. The production tunnel 21 may include one or more critical locations 23 where the mining vehicle 1a, 1b should operate. Such critical locations 23 may include predetermined

drilling sites, loading sites, etc. The operation of mining vehicles 1a, 1b in such critical locations 23 is monitored by the mine control system 11. The production tunnel 21 where each mining vehicle 1a, 1b operates at a given time is known on the basis of the data communication connection 9a. More accurate information cannot be obtained on the location of the mining vehicles 1a, 1b in the production tunnel 21 by means of the wireless network 10 since the wireless network 10 built in the production tunnels 21 is not sufficiently comprehensive for use in location determination. Thus the wireless network 10 is used in the production tunnels 21 mainly for data transmission between the terminal 9 in the mining vehicle 1 and the mine control system 11. When the mining vehicle 1 is in the production tunnel 21, a more accurate location can be determined by the means provided in the mining vehicle 1. The location can be determined by measuring the distance M ~~travelled~~ traveled and determining the direction S of travel. The location thus obtained is sufficiently accurate at least for finding out whether the mining vehicle 1 has operated in a pre-planned manner in the predetermined critical location 23.